

# Comparison between Citrus sinensis flowers and Mentha spicata leave essential oils inhalation on lung function and exercise performance among a group of athlete students

<b>Submission date</b> 10/06/2016	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
<b>Registration date</b> 20/09/2016	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
<b>Last Edited</b> 20/10/2017	<b>Condition category</b> Other	<input type="checkbox"/> Individual participant data

## Plain English summary of protocol

### Background and study aims

Recently, there has been a lot of interest in the effects of essential oils on athletic performance and health. Essential oils are natural oils which are taken from plants and other natural sources. They have been used for many years in alternative medicine, as they are thought to help improve the function of the mind and body. This study will look at oils from the Citrus sinensis (sweet orange) flower and Mentha spicata (spearmint) leaves to find out if they are able to improve lung function and athletic performance in healthy male athletes.

### Who can participate?

Healthy male university students aged between 18 and 20 from the faculty of physical education at An-Najah National University in Nablus-Palestine.

### What does the study involve?

Participants are randomly allocated to one of two groups. Those in the first group inhale M. spicata oil mixed with 2ml of normal saline (salt water) which has been turned into a vapor. Those in the second group inhale C. sinensis flower oil mixed with 2ml of normal saline (salt water) which has been turned into a vapor. Before and five minutes after inhalation, participants complete a breathing test using a spirometer (device used for measuring the amount of air breathed in and out) to test their lung function. In addition, before and after inhalation, participants run 1500 metres in a stadium to find out if inhaling the oil has improved their athletic performance.

### What are the possible benefits and risks of participating?

Participants may benefit from improved lung function and athletic performance as a result of taking part in the study. There are no notable risks involved with taking part in this study.

### Where is the study run from?

An-Najah National University (Palestinian Territory)

When is the study starting and how long is it expected to run for?  
April 2016 to October 2016

Who is funding the study?  
Investigator initiated and funded (Palestinian Territory)

Who is the main contact?  
Dr Nidal Jaradat  
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## Contact information

**Type(s)**  
Scientific

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## Additional identifiers

**EudraCT/CTIS number**

**IRAS number**

**ClinicalTrials.gov number**

**Secondary identifying numbers**  
1/May/ 2016

## Study information

**Scientific Title**  
The effect of Inhalation of Citrus sinensis flowers and Mentha spicata leave essential oils on lung function and exercise performance: a quasi-experimental uncontrolled before-and-after study

**Study objectives**

The aim of this study is to compare the effects between the Citrus sinensis flower and Mentha spicata leaves essential oils inhalation among a group of athlete male students on their lung functions

### **Ethics approval required**

Old ethics approval format

### **Ethics approval(s)**

Institutional Review Board (IRB) at An Najah National University, 03/05/2016, ref: 1/May/2016

### **Study design**

Single-centre randomised parallel trial

### **Primary study design**

Interventional

### **Secondary study design**

Randomised parallel trial

### **Study setting(s)**

Other

### **Study type(s)**

Diagnostic

### **Participant information sheet**

Not available in web format, please use the contact details to request a patient information sheet

### **Health condition(s) or problem(s) studied**

Exercise performance and lung function

### **Interventions**

Twenty male university students from the faculty of physical education at An-Najah National University in Nablus-Palestine will be randomly assigned into two different groups. The study is single blind participant level.

Group 1: Participants will nebulize with M. spicata oil (0.02ml/kg of body mass of oil) mixed with 2ml of normal saline.

Group 2: Participants will nebulize with C. sinensis flower oil (0.02ml/kg of body mass of oil) mixed with 2ml of normal saline.

Participants in both groups completed a 1500m run test in a stadium race before and after inhalation of the oils, they inhaled the oils 5 minutes before running. Lung function tests are undertaken using a spirometer before and after inhalation.

### **Intervention Type**

Other

### **Primary outcome measure**

Lung function is measured using spirometry before and 5 minutes after inhalation of volatile oil.

### **Secondary outcome measures**

Athletic performance is measured using a 1500 meter run test before and after inhalation of volatile oil.

### **Overall study start date**

01/04/2016

### **Completion date**

01/10/2016

## **Eligibility**

### **Key inclusion criteria**

1. Healthy
2. Male university students from the faculty of physical education at An-Najah National University in Nablus-Palestine
3. Aged between 18-20 years

### **Participant type(s)**

Healthy volunteer

### **Age group**

Adult

### **Lower age limit**

18 Years

### **Upper age limit**

20 Years

### **Sex**

Male

### **Target number of participants**

20

### **Key exclusion criteria**

Suffering from any disease

### **Date of first enrolment**

22/06/2016

### **Date of final enrolment**

22/07/2016

## **Locations**

### **Countries of recruitment**

Palestine, State of

**Study participating centre**  
**An-Najah National University**  
West Bank  
Nablus  
Palestine, State of  
00970

## **Sponsor information**

**Organisation**  
An-Najah National University

**Sponsor details**  
Department of Pharmacy  
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**Sponsor type**  
University/education

**Website**  
<https://www.najah.edu/ar/>

**ROR**  
<https://ror.org/0046mja08>

## **Funder(s)**

**Funder type**  
Other

**Funder Name**  
Investigator initiated and funded

# Results and Publications

## Publication and dissemination plan

Planned publication of study results in a peer reviewed journal.

## Intention to publish date

01/10/2017

## Individual participant data (IPD) sharing plan

## IPD sharing plan summary

Available on request

## Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Results article</a>	results	22/09/2016		Yes	No